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EXAMINER	
JEAN GILLES, JUDE	
ART UNIT	**PAPER NUMBER**
2143	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/026,583	COMETTO ET AL.	
	Examiner	Art Unit	
	Jude J. Jean-Gilles	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/21/2007; 04/21/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Action is in regards to the Reply received on 05/21/2007.

Information Disclosure Statement

1. The references listed on the Information Disclosure Statement submitted on 04/21/2003, 05/28/2003, and 05/21/2007 have been considered by the examiner (see attached PTO-1449A).

Response to Amendment/Arguments

2. No claim has been amended, and there no newly added claims. Claims 1-69, remain pending and represent a method and apparatus for a "**METHODS AND APPARATUS FOR NETWORK CONGESTION CONTROL**".

Applicant's arguments with respect to claims 1-69 have been carefully considered, but are not deemed fully persuasive. Applicant's arguments are deemed moot in view of the new ground of rejection as explained here below. Applicants' have made no amendments to the claims to perhaps place them in condition for allowance.

In response to Applicant's arguments, 37 CFR § 1.11(c) requires applicant to "clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must show the amendments avoid such references or objections."

Applicant's Request for Reconsideration filed on 05/21/2007 has been carefully considered but is not deemed fully persuasive. However, because there exists the

likelihood of future presentation of this argument, the Examiner thinks that it is prudent to address Applicants' main points of contention:

A: Applicant contends that The material the Examiner cites Fawaz does not describe "sending a first instruction from the network switch to the first intermediate switch for the first intermediate switch to control traffic from the source node to the destination node, wherein the first instruction is based on the operation of characterizing of traffic flow at the network switch" or "receiving a second frame that was generated by the second intermediate node, the second frame having a source identifier corresponding to the second end node and a destination identifier corresponding to the first end node, wherein the second frame is received at the first intermediate node and includes instructions for the first intermediate node to adjust the current allowed rate from the first end node to the second end node" as is recited in independent claims.

B: Applicant contends that Fawaz describes no receiving a frame that includes instructions to adjust the current allowed rate from another node.

C: Furthermore, Applicants allege Fawaz does not teach or suggest any fibre channel switch as recited in the claims. Fawaz never specifically describes any fibre channel switch and only makes passing reference to other technologies.

As to point A, It is the position of the Examiner that Fawaz teaches the limitations of the claimed invention. Applicants simply states that applicant does not disclose the recitation of claim 1 in the passages cited without taking into account the essence/gist of the prior art teachings. Applicants are respectfully asked to review the entire teachings

of the prior art of record to avoid any mischaracterization. In column of the specifications, Fawaz discloses data packets with identification information, constituting data frames (fig. 5) transmitted from a source to a destination address, though a network switch (intermediate). The packets are then forwarded one hop/switch at a time, which means that the network has at least two switches (one intermediate) between the source node and the destination node.

As to point B, Fawaz teaches the receiving of an Internet frame(fig. 5) that contains a source address field, a length of data field, and a data field and these fields carry a minimum rate to packets for a particular SLA defined by defined by at least a source identifier, a destination identifier, and a minimum data rate.

As to point C, Fawaz teaches "the actual links between the QoS Nodes can be formed in any manner known to those of skill in the art. For instance, the links interconnecting the QoS Nodes can be built from single or multiple twisted wire pairs, optical fibers (emphasis added), or coaxial cable. In other embodiments, the links can be radio links, or even free space infrared links. In addition the protocol used by the links may be based on Gigabit Ethernet, ATM, WDM, SONET, or other Technology". (see column 3, lines 49-67)

Examiner notes that no new matter has been added and that the claims are supported by the application as filed. However, applicant has failed in presenting claims and drawings that delineate the contours of this invention as compared to the cited prior art. Applicant has failed to clearly point out patentable novelty in view of the state of the

art disclosed by the references cited that would overcome the 102(e) rejections applied against the claims, the rejection is therefore sustained.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21 (2) of such treaty in the English language.

4. Claims 1-69 are rejected under 35 U.S.C. 102(e) as being anticipated by Fawaz et al (Fawaz), Patent No. 6,970,424 B2.

Regarding claim 1-69 : Fawaz discloses:

1. (Previously presented) a method for controlling congestion at a network switch (fig. 4, items A, B, and C), the method comprising:

receiving a frame (fig. 5)having a source identifier field corresponding to a source node and a destination identifier field corresponding to a destination node, the frame having been transmitted to the network switch through a first intermediate switch between the network switch and the source node (column 2, lines 25-35; column 4, lines 27-33; and column 76, lines 3-11);

characterizing traffic flow at the network switch, wherein the network switch is a fibre channel switch (column 6, lines 27-35) and

sending a first instruction from the network switch to the first intermediate switch for the first intermediate switch to control traffic from the source node to the destination node, wherein the first instruction is based on the operation of

characterizing of traffic flow at the network switch (fig. 4; items A, B, and C; Column 4, lines 34-49).

2. (original) The method of claim 1, wherein the first intermediate switch is an edge switch coupled to the source node (fig. 4, items.10, 108, and A.

3. (original) The method of claim 2, wherein the first instruction sent to the first intermediate switch comprises an edge quench frame (fig. 5).

4. (original)The method of claim 3, wherein the edge quench frame has a source identifier field corresponding to the destination node and a destination identifier field corresponding to the source node (fig. 5; column 7, lines 18-30).

5. (original) The method of claim 4, wherein the edge quench frame includes network switch congestion information (column 14, lines 10-17).

6. (previously presented) The method of claim 5, wherein the edge quench frame includes network switch queue level information that indicates whether an optimal queue level has been expected(column 4, lines 49-60).

7. (original) The method of claim 6, wherein the edge quench frame directs the first intermediate switch to control the allowed rate for transmitting from the source node and the destination node by half (column 4, lines 61-67; column 5, lines 1-5; note that the downstream node indicates to the upstream node to reduce the transmission rate by 1½, 1/3, or any amount other than specified.

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8. (original) The method of claim 7, wherein the first intermediate switch and the network switch axe connected using fibre channel (column 6, lines 27-35).

9. (original) The method of claim 1, wherein the frame was transmitted through a second intermediate switch between the first intermediate switch and the network switch (fig. 4, A, B, and C).

10. (original) The method of claim 9, further comprising:

sending a second instruction from the network to the second intermediate switch to control traffic from the source node to the destination node (column 15, lines 13-20; fig. 4, items A, B, and C).

11, (original) The method of claim 10, wherein the first instruction sent to the first intermediate switch comprises a path quench frame (fig. 5; column 13, lines 3-19).

12. (original) The method of claim 11, wherein the second instruction sent to the second intermediate switch comprises the path quench frame (fig. 5; column 13, lines 3-19).

13. (original) The method of claim 12, wherein the path quench frame has a source identifier field corresponding to the destination node and a destination identifier field corresponding to the source node (fig. 5; column 13, lines 3-19; column 2, lines 25-34).

14. (original) The method of claim 13, wherein the path quench frame includes network switch congestion reformation (column 14, lines 10-17).

15. (original) The method of claim 14, wherein the path quench frame includes network switch queue level information (column 4, lines 49-67).

16. (original) The method of claim 15, wherein the path quench frame directs the first and second intermediate switches to reduce the allowed rate for transmitting from the source node and the destination node to 0bps (column 4, lines 49-67).

17. (original) The method of claim 1, wherein characterizing traffic flow comprises checking the network switch queue level (column 4, lines 49-67).

18. (original) The method of claim 17, wherein characterizing traffic flow comprises determining whether to transmit path quench or edge quench frames (column 4, lines 49-67).

19. (original)The method of claim 18, wherein path quench frames are transmitted when the queue level exceeds a high threshold (column 4, lines 49-67).

20. (original)The method of claim 19, wherein edge quench frames are transmitted when the queue level is between a high threshold and a low threshold (column 4, lines 49-67).

21. (original) The method of claim 20, wherein the edge quench and path quench frames include a buffer level indicator (column 4, lines 49-67).

22. (previously presented)A method for controlling traffic flow between first and second end nodes through first and second intermediate nodes (column 15, lines 13-20; fig. 4, items A, B, and C), the method comprising:

transmitting a first frame having a source identifier corresponding, to the first end node and a destination identifier corresponding to the second end node, wherein the frame is transmitted at a first intermediate node to a second intermediate node between the first intermediate node and the second cad node (column 15, lines 13-20; column 4, lines 27-33; and column 76, lines 3-11; fig. 4, items A, B, and C);

receiving a second frame that was generated by the second intermediate node, the second flame having a source identifier corresponding to the second end node and a destination

identifier corresponding to the first end node, wherein the second frame is received at the first intermediate node and includes instructions for the first

intermediate node to adjust the current allowed rate from the first end node to the see, end node (column 2, lines 25-35; column 4, lines 27-33; and column 76, lines 3-11); and

at the first intermediate node, adjusting the current allowed rate from the first end node to the second end node upon receiving the second frame (column 4, lines 49-67).

23. (original) The method of claim 22, wherein the current allowed rate cannot exceed the maximum allowed rate (column 4, lines 61-67; column 5, lines 1-5).

24. (original) The method of claim 22, wherein adjusting the current allowed rate comprises:

determining that the second frame is an edge quench frame (fig. 5; column 7, lines 18-30).

25. (original) The method of claim 24, wherein the current allowed rate is adjusted after it is determined that the first intermediate node is an edge switch coupled to the first end node (figs. 4 and 5; column 7, lines 18-30).

26. (original) The method of claim 24, wherein the current allowed rate is adjusted after it is determined that the first intermediate node is

coupled to a neighboring node that does not support congestion control nodes (column 15, lines 13-20; fig. 4, items A, B, and C).

27. (original) The method of claim 25, wherein the first end node is a host nodes (column 15, lines 13-20; fig. 4, items A, B, and C).

28. (original) The method of claim 27, wherein the second end node is storage (column 15, lines 13-20; fig. 4, items 106, 108, A, B, and C).

29. (original) The method of claim 25, wherein the first end node is storage (column 15, lines 13-20; fig. 4, items 106, 108, A, B, and C).

30. (original) The method of claim 29, wherein the second end node is a host (column 15, lines 13-20; fig. 4, items 106, 108, A, B, and C).

31. (original) The method of claim 25, wherein the current allowed rate is initially the maximum allowed rate.

32. (original) The method of claim 31, wherein the current allowed rate is divided by two upon receiving an edge quench Frame (figs. 4 and 5; column 7, lines 18-30).

33. (original) The method of claim 32, wherein the current allowed rate increases at a recovery rate (fig. 9, column 10, lines 3-30).

34. (original) The method of claim 33, wherein the recovery rate is dynamically set (fig. 9, column 10, lines 3-30).

35. (original) The method of claim 33, wherein the recovery rate
is set based on information contained in the received edge quench frame (figs. 4 and 5; column 7, lines 18-30).

36. (original) The method of claim 35, wherein the recovery rate is set based on an input queue associated with the second intermediate node (column 4, lines 49-67).

37. (original) The method of claim 22, wherein adjusting the current allowed rate comprises:

determining that the second frame is a path quench frame (column 15, lines 13-20; fig. 4, items 106, 108, A, B, and C).

38. (original) The method of claim 37, wherein the current allowed rate is initially the maximum allowed rate (figs. 4 and 5; column 7, lines 18-30).

39. (original) The method of claim 38, wherein the current allowed rate is reduced to 0 bps upon receiving an path quench frame (fig. 5; column 13, lines 3-19).

40. (original) The method of claim 39, wherein the current allowed rate increases at a recovery rate (figs. 4 and 5; column 7, lines 18-30; fig. 9)°

41. (original) The method of claim 40, wherein the recovery rate is dynamically set (fig. 9, column 10, lines 3-30).

42, (original) The method of claim 40, wherein the recovery rate is set based on information contained in the received path quench frame (fig. 5; column 13, lines 3-19; fig. 9, column 10, lines 3-30).

43. (original) The method of claim 42, wherein the recovery rate is set based on an input queue associated with the second intermediate node (column 4, lines 49-67).

44. (previously presented) A switch for controlling the traffic flow between a source node and a destitution node, the switch comprising:

a first port for coupling to a first external node (fig. 6, item 317; column6, lines 47-54; column 11, lines 22-40);

a second port for coupling to a second external node (fig. 6, item 317; column6, lines 47-54; column 11, lines 22-40);

a first queue associated with the first port for receiving dam from the first external node being sent to a third node that is reached through the second port and the second external node, the first queue including a first portion for holding data for transmission through the first port and a second portion for holding data for transmission through the second port (column 4, lines 49-67; column 5, lines 1-11); and

a filter coupled to the first queue, the filter configured to receive dam from the first queue and determine whether transmission of the data should be delayed based on information received from and generated by the second node. Inherently A switch Such as switch A, B, or C, provides the basic functions of a bridge including filtering of data traffic by MAC address, "learning" of a MAC address based upon a source MAC address of a frame and forwarding of the frame based upon a destination MAC.

45. (Original) The switch of claim 44, further comprising a filter queues, wherein the filter queues are configured to hold data set for delayed transmission column 4, lines 49-67; column 5, lines 1-11).

46. (original) The switch of claim 45, wherein each filter queue is associated with a flow (column 4, lines 49-67; column 5, lines 1-11).

47. (original) The switch of claim 46, wherein the flow is traffic from a source node to a destination node (column 2, lines 25-35; column 4, lines 27-33; and column 76, lines 3-11).

48. (original) The switch of claim 47, wherein the first queue is a virtual output queue(column 4, lines 49-67; column 5, lines 1-11).

49. (previously presented) The switch of claim 47, wherein each queue is .'

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associated with a priority(column 4, lines 49-67; column 5, lines 1-11)..

50. (original) The switch of claim 49, wherein each filter queue is associated with an input port and an output port (column 4, lines 49-67; column 5, lines 1-11).

51. (original) The switch of claim 44, further comprising a rate limiter coupled to a filter queue (column 4, lines 49-67; column 5, lines 1-11).

52. (original) The switch of claim 51, wherein the amount of delay is determined by the rate limited.

53. (original) The switch of claim 52, wherein the rate limiter uses token buckets. Note that using token buckets is inherently used in the art of finding the amount of rate delay.

54. (original) The switch of claim 53, wherein the amount of delay is determined based on information received from the second external node (fig. 4; items A, B, and C; column 4, lines 34-49).

55. (original)The switch of claim 54, wherein the number of tokens allocated to a filter queue associated with a flow is halved upon receipt of an edge quench frame from the second external node identifying the flow (figs. 4 and 5; column 7, lines 18-30).

56. (original) The switch of claim 55, wherein the number of tokens allocated to the filter queue associated with the flow increases at a recovery rate (fig. 9, column 10, lines 3-30).

57. (original) The switch of claim 55, wherein the recovery rate is dynamically determined (fig. 9, column 10, lines 3-30).

58. (original) The switch of claim 55, wherein the recovery rate is set based on second external node queue level information (fig. 9, column 10, lines 3-30).

59. (original)The switch of claim. 54, wherein the number of tokens allocated to a filter queue associated with a particular flow is set to zero upon receipt of a

path quench frame from the second external node identifying the particular flow (fig. 5; column 13, lines 3-19).

60. (original) The switch of claim 39, wherein the number of tokens allocated to the filter queue associated with the flow increases at a recovery rate (fig. 9, column 10, lines 3-30).

61, (original) The switch of claim 60, wherein the recovery rate is dynamically determined (fig. 9, column 10, lines 3-30).

62. (original) The switch of claim 60, wherein the recovery rate is set based on second external node queue level information (fig. 9, column 10, lines 3-30).

63. (previously presented) An apparatus for controlling congestion, the method comprising:

means for receiving a frame having a source identifier field corresponding to a source node and a destination identifier field corresponding to a destination node, the frame having been transmitted to the network switch through a first intermediate switch between the network switch and the source node(column 2, lines 25-35; column 4, lines 27-33; and column 76, lines 3-11);

means for characterizing traffic flow at the network switch; and means for sending a first instruction from the network switch to the first intermediate switch for the first intermediate switch to control traffic from the source node to the destination

node, wherein the first instruction is based on the operation of characterizing of traffic flow at the network switch (fig. 4; items A, B, and C; column 4, lines 34-49)..

64. (original) The apparatus of claim 63, wherein the first intermediate switch is an edge switch coupled to the source node (figs. 4 and 5; column 7, lines 18-30).

65. (original) The apparatus of claim 64, wherein the first instruction sent to the first intermediate switch comprises an edge quench frame (figs. 4 and 5; column 7, lines 18-30).

66. (original) The apparatus of claim 65, wherein the edge quench frame has a source identifier field corresponding to the destination node and a destination identifier field corresponding to the source node (figs. 4 and 5; column 7, lines 18-30).

67. (previously presented) A computer readable medium for controlling congestion, the computer readable medium comprising:

computer code for receiving a frame having a source identifier field corresponding to a source node and a destination identifier field corresponding to a destination node, the frame having been transmitted to the network switch through a first intermediate switch between the network switch and the source node (column 2, lines 25-35; column 4, lines 27-33; and column 76, lines 3-11);

computer code for characterizing traffic flow at the network switch; and

computer code for sending a first instruction from the network switch to the first

intermediate switch for the first intermediate switch to control traffic from the source node to the destination node, wherein the first instruction is based on the operation of characterizing of traffic flow at the network switch (fig. 4; items A, B, and C; column 4, lines 34-49).

68. (original) The computer readable medium of claim 67, wherein the first intermediate switch is an edge switch coupled to the source node (figs. 4 and 5; column 7, lines 18-30).

69. (original) The computer readable medium of claim 68, wherein the first instruction sent to the first intermediate switch comprises an edge quench frame (figs. 4 and 5; column 7, lines 18-30).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from examiner should be directed to Jude Jean-Gilles whose telephone number is (571) 272-3914. The examiner can normally be reached on Monday-Thursday and every other Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley, can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-9000.

Jude Jean-Gilles

Patent Examiner

Art Unit 2143

JJG

August 03, 2007

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